BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2018-318-E

In the Matter of	)	**REBUTTAL TESTIMONY OF**
	)	**JANICE HAGER FOR**
Application of Duke Energy Progress, LLC for	)	**DUKE ENERGY PROGRESS,**
Adjustments in Electronic Rate Schedules and	)	**LLC**
Tariffs and Request for an Accounting Order	)	

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT POSITION.

A. My name is Janice Hager and my business address is 2049 Mount Zion Church Road, Alexis, North Carolina. I am President of Janice Hager Consulting, LLC.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I did.

II. PURPOSE AND SCOPE

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to portions of the testimony filed by Vote Solar's witness Justin R. Barnes and South Carolina State Conference of the National Association for the Advancement of Colored People, South Carolina Coastal Conservation League, and Upstate Forever witness Jonathan Wallach. These witnesses raise concerns about the use of the minimum system concept for allocation of costs in Duke Energy Progress' Cost of Service Study. Finally, I address two issues not related to minimum system raised by Witnesses Barnes and Wallach, specifically inclusion of Advanced Metering Infrastructure (AMI) meter costs and uncollectible costs as customer-related costs to be recovered through the Basic Facilities Charge (BFC).

III. CUSTOMER-RELATED COSTS

Q. PLEASE DESCRIBE THE COSTS THAT ARE CLASSIFIED AS CUSTOMER-RELATED COSTS IN DUKE ENERGY PROGRESS' COST OF SERVICE STUDY.

A. As I stated in my direct testimony, customer-related costs are costs incurred as a result of the number of customers being served. Customer costs do not vary with the customers' volume of usage but are related to the number of customers. Cost causation is a key component in determining the appropriate assignment of revenues, expenses, and rate base among jurisdictions and customer classes. In developing the cost of service study, the question at hand is what costs are "caused" by the number of customers and do not vary with the customers' volume of usage. Duke Energy Progress has included the costs of the service drop and meter, meter reading, billing and collection, and customer information and services in the customer-related classification of costs. In addition, Duke Energy Progress has allocated to the customer class a portion of distribution costs that the Company has identified as customer-related.

In rate design, the BFC is intended to recover the customer-related costs by establishing a fixed charge that does not vary with usage.

IV. MINIMUM SYSTEM CONCEPT

Q. PLEASE DISCUSS THE MINIMUM SYSTEM CONCEPT.

A. The minimum system concept is used to determine the portion of distribution assets that are appropriately allocated to the customer classification. The minimum system concept acknowledges that a portion of the distribution system is required in order for customers to simply receive electricity, regardless of whether the customer uses 10 kWh or 1000 kWh per month. Each customer has "caused" some portion of the distribution system to be built. This portion of the distribution system was caused by the customer, regardless of level of usage, and does not vary with usage. Thus, following cost causation principles, the associated costs should be allocated to the customer class.

Q. IS THE METHODOLOGY USED BY DUKE ENERGY PROGRESS IN DEVELOPING ITS MINIMUM SYSTEM STUDY REASONABLE?

A. Yes. It is consistent with long-standing history for Duke Energy Progress and Duke Energy Carolinas in setting their North Carolina retail rates. In addition, the minimum system approach is used by utilities in other states as well.

Q. WHY IS DUKE ENERGY PROGRESS PROPOSING THE MINIMUM SYSTEM CONCEPT IN THIS CASE?

A. The current rate structure was established based on a cost of service that did not include minimum system. The most recent Public Service Commission of South Carolina Order on the issue is from 1991. In that case, the

Commission did not accept the use of minimum system in a Duke Energy Carolinas (then Duke Power) rate case.[1] (The testimony from Commission Witness Randy Watts and the Commission order speak only briefly to the issue.) Since that time Duke Energy Progress (as well as Duke Energy Carolinas) has not proposed using the minimum system to determine the allocation of costs to the customer class, even though it uses it in North Carolina.[2] The Company is now proposing the use of the minimum system concept for consistency between the states as well as because of its increasing concern with the subsidization allowed in the existing rate structure and the importance of improving the price signal sent to customers through its rates.

Q PLEASE ELABORATE ON THESE TWO CONCERNS.

A. Since the time of the 1991 Duke Energy Carolinas Order, there has been an increasing focus on the issue of cross-subsidization between customers. For example, the recent focus on net metering demonstrates the concern and interest in this issue.

In addition, there is an increasing concern with ensuring that the price signal sent by the rate structure properly aligns with cost causation. When a rate structure varies from cost causation, customers make decisions with inaccurate price signals and cause costs to be shifted for recovery from other

[1] South Carolina Public Service Commission. Docket No. 91-216-E. Order No. 91-1022. p. 7. November 18, 1991.

[2] The most recent case approving the use of Minimum System for Cost of Service Studies: North Carolina Utilities Commission Docket Nos. E-2, Sub 1142, et al, Order Accepting Stipulation, Deciding Contested Issues, and Granting Partial Rate Increase, February 23, 2018. On pages 106 – 114, the "Basic Customer Charge" section, the NCUC order describes the positions by parties on minimum system and approves a Basic Customer Charge that is based on the minimum system method.

customers within the rate class. A rate with an inappropriately low BFC necessarily results in an inappropriately higher demand or energy rate. When rates reflect cost causation, subsidization and shifting of cost responsibility are minimized and customers can make prudent, economic decisions, including decisions with regards to investments in solar generation and energy efficiency.

Q. CAN YOU PROVIDE ILLUSTRATIVE EXAMPLES OF THE PROBLEM OF SHIFTING COSTS FROM THE CUSTOMER CLASS TO OTHER CLASSIFICATIONS?

A. Yes. Consider a customer who has a summer home that is used only once a year for a week during the summer. In the absence of the minimum system cost allocation to the customer class and subsequent reflection of that customer cost in the BFC, the revenues from the combination of the BFC and the energy charge would be insufficient to cover the costs caused by that customer for the distribution equipment necessary to ensure that customer can enjoy the electricity provided for that one week each year. These costs are borne by all other customers instead.

Another example is a net-metering customer who can offset much of the energy usage through roof-mounted solar facilities. However, the customer still has air conditioning that is used on cloudy days and hot summer nights to keep the house cool and heating on cold winter mornings to keep the house warm. Without a portion of the distribution costs being allocated to the customer class and then to the BFC, that customer is not paying a fair share of

the cost of the distribution facilities needed to serve the customer. The costs are borne, once again, by all other customers. That is not fair to other customers.

Q. DO INTERVENORS AGREE WITH THE METHOD DUKE ENERGY PROGRESS USED TO ALLOCATE COSTS TO THE CUSTOMER CLASS?

A. Generally, intervenors agree that costs that are functionalized as customer costs are also appropriately allocated to the customer classification. These include costs of the service drop and meter, meter reading, billing and collection, and customer information and services. Only two witnesses (Witnesses Barnes and Wallach) raise concerns with Duke Energy Progress' use of minimum system which allocates a portion of costs functionalized as distribution costs to the customer classification (instead of the demand classification) and then includes these costs in the development of the BFC. On page 17 of his direct testimony, Witness Wallach states his belief that the distribution costs the Company designated as customer-related are, instead, demand-related and inappropriate for inclusion in the BFC. On page 24 of his direct testimony, Witness Barnes states his disagreement with using the minimum system method for allocating a portion of the distribution costs distribution costs or for developing the BFC. Duke Energy Progress stands by the position set forth in my direct testimony and in this rebuttal testimony that minimum system costs are properly allocated to the customer class and, thus, appropriately recovered through the BFC.

Q. HOW DO INTERVENORS ATTEMPT TO JUSTIFY THEIR OPPOSITION TO THE INCLUSION OF MINIMUM SYSTEM COSTS IN THE BASIC FACILITIES CHARGE?

A. Witnesses Barnes and Wallach contend that the costs of the service drop and meter, meter reading, billing and collection and customer information and services are the only costs that should be used in setting the BFC.[3] On page 15 of his direct testimony, Witness Wallach quotes *Principles of Public Utility Rates* to support his argument noting that the text says that metering and billing expenses are "the most obvious examples" of customer costs.[4] He fails to mention that the quoted text does not say these are the only costs.

Witness Barnes, also relying on *Principles of Public Utility Rates,* claims on page 31 of his testimony that the minimum system method is not generally accepted as an appropriate method for classifying system costs.[5] It is true that Dr. Bonbright recognizes the difficulty of determining the proper allocation for the minimum system costs, but he concludes that the exclusion of minimum system costs from demand-related costs is on "much firmer ground" than its exclusion from customer costs.[6] Ultimately, however, he recognizes that utilities must distribute all costs among the classes of customers in a fully-distributed cost analysis.[7] But even more important is the

[3] Barnes Direct Testimony, p. 38, Wallach Direct Testimony, p. 14.
[4] James C. Bonbright, *Principles of Public Utility Rates.* Columbia University Press (1961 edition), p. 311.
[5] Bonbright, pp. 348-349
[6] Bonbright, pp. 348.
[7] Bonbright, pp. 348-349.

NARUC Electric Utility Cost Allocation Manual (CAM)[8] that was developed after Dr. Bonbright's work. The CAM, developed by a large group of mostly state utility commissions and FERC staff members, moved from the theoretical world of Dr. Bonbright to the reality of utilities' needs to move from development of revenue requirements to rate structures. The full allocation of all costs is a critical step in the cost of service study process. As I noted in my direct testimony, the CAM states that a portion of the distribution costs ARE customer-related.

On pages 34-35 of his testimony, Witness Barnes acknowledges that the CAM refers to the Minimum System Method as one method of classifying distribution costs, although he notes that the CAM does not endorse any method in particular. Thus, by his own testimony, Witness Barnes must acknowledge the acceptance of the validity of the minimum system concept.

On page 35 of his direct testimony, Witness Barnes also points to the statement on page 136 of the CAM that references an "unresolved argument" about distribution costs. The quote acknowledges that there are distribution costs "usually identified as customer related;" thus Witness Barnes must acknowledge the acceptance by the writers of the CAM of the allocation of some distribution costs as customer-related. It also appears that the "unresolved argument" is between the two methods discussed in the CAM both of which recognize that some portion of the distribution system is

[8] *Electric Utility Cost Allocation Manual*, National Association of Regulatory Utility Commissioners, January 1992.

necessary to serve customers, regardless of whether the customers take any energy from the system.

Witness Barnes further acknowledges on page 34 of his direct testimony that the method is still in use, noting that there are states in which "some portion of the shared distribution system may be considered customer-related…."

Q. WITNESS BARNES SUGGESTS USING MARGINAL COSTS AS THE BASIS FOR SETTING CUSTOMER CHARGES. PLEASE RESPOND.

A. Mr. Barnes states that the appropriate customer charge should be based on the marginal costs of connecting customers.[9] The issue in cost of service is allocating existing embedded costs. The CAM speaks to the marginal costs theory, concluding "A deficiency of the marginal approach for ratemaking purposes is that the marginal cost-based prices will yield the utility's allowed revenue requirement based on embedded costs only by rare coincidence."[10] Duke Energy Progress cannot ignore the revenue requirements associated with prudently incurred costs and simply not allocate them. Dr. Bonbright ultimately concludes that not allocating costs is not an option.[11] As I noted above, the reality is that all costs must be allocated; the only question is where. The distribution system has been constructed to connect generation sources to individual customers. All customers benefit from the existence of the system. It would be unfair to existing customers if Duke Energy Progress

[9] Barnes Direct Testimony, p. 38.
[10] NARUC CAM, p. 14.
[11] Bonbright, pp. 348 - 349.

only considered the marginal cost of serving the next customer and did not charge new customers for a pro rata share of the existing system.

Q. WITNESS BARNES CLAIMS ON PAGE 31 OF HIS TESTIMONY THAT "THE MINIMUM SYSTEM METHOD IS BASED ON THE DUBIOUS PREMISE THAT CUSTOMERS WILL PAY TO CONNECT TO THE GRID EVEN IF THEY DO NOT INTEND TO USE ANY ELECTRICITY." IS THIS A "DUBIOUS PREMISE"?

A. It is not a premise at all. The premise of the minimum system methodology is not that a customer would connect to an electric utility's system with no intention of ever using any of the utility's service; rather, the premise as I explained earlier, is that when a customer DOES connect to a utility's system because he intends to use the utility's service, there is a system there that will enable the customer to receive electricity at his residence. Mr. Barnes also states on page 31 that "a customer who has no demand for electricity would have no need to be connected to the distribution system." That is true, but it is also true that person would not be a customer of a utility and would not pay a BFC. Similarly, Mr. Wallach states that one of the minimum system method flaws is that it "implausibly assumes that a utility would incur costs to build a distribution grid to serve customers that have no load."[12] The assumption that customers will want the ability to use electricity is neither dubious nor implausible. ALL customers expect that the lights will come on when they flip the light switch. In order for that to happen, the Company had to install

[12] Wallach Direct Testimony, p. 9.

some "minimum" amount of distribution facilities in addition to the service drop and meter. Without that minimum system, there is no flow of electricity. Each customer "caused" some portion of the distribution system to be built. That is what the minimum system method seeks to identify.

Q. WHAT HAPPENS TO THE COSTS THAT WOULD HAVE BEEN ALLOCATED TO THE CUSTOMER CLASS AND INCLUDED IN THE DEVELOPMENT OF THE BFC IF THEY ARE TREATED IN A DIFFERENT MANNER?

A. The costs that would have been allocated to the customer class and used in the development of the BFC are necessarily assigned to either the demand or energy class which would typically result in their inclusion in demand and/or energy charges. Witnesses Barnes and Wallach support identifying the costs as demand-related but do not explicitly state how they propose for the Company to recover these costs.[13] To the extent minimum system costs were identified as demand-related, the collection of those costs would typically be through a demand charge (for rate schedules that have a demand charge) or through an energy charge (for rate schedules such as Duke Energy Progress Rate Schedule RES which do not have a demand charge). For the reasons discussed above, I do not agree with the classification of minimum system costs as demand-related. Duke Energy witness Wheeler discusses the concerns with this rate structure in his testimony.

[13] Barnes Direct Testimony, p. 20, line 20 – p. 21, lines1-2; Wallach Direct Testimony, p.3, lines 5-8 and 14-15.

Q. ON PAGE 21 OF HIS DIRECT TESTIMONY, WITNESS BARNES SAYS THAT THE MINIMUM SYSTEM METHOD "ELIMINATES THE PRICE SIGNAL THAT WOULD OTHERWISE BE PRESENT." DO YOU AGREE?

A. No. In fact, it is the current rate structure that is sending an incorrect price signal. The current rate structure with no distribution costs included in setting the BFC sends an erroneous price signal that implies that reducing energy and demand usage allows the Company to avoid a portion of the distribution system that is NOT avoidable, i.e., the minimum system. The minimum system method eliminates an ERRONEOUS price signal that is otherwise present.

Q. PLEASE ADDRESS WITNESS BARNES' STATEMENT REGARDING THE EXISTING RATES OF RETURN FOR RESIDENTIAL CUSTOMERS.

A. On page 37 and 38 of his testimony, Witness Barnes notes that Duke Energy Progress used the cost of service study that included minimum system to determine the existing rates of return by customer class and rate schedule. He concludes that removing the minimum system assumption produces a "more rational … result." There is no basis for such a conclusion that the variation in returns without minimum system are more "rational" that those with minimum system.

Q. WITNESS BARNES OFFERS SEVERAL SPECIFIC CRITICISMS OF THE MINIMUM SYSTEM METHODOLOGY USED BY DUKE ENERGY PROGRESS. PLEASE ADDRESS THE ISSUES HE RAISES.

A. Witness Barnes' first criticism is that the Company used the smallest equipment customarily installed instead of the smallest equipment that could be installed.[14] The methodology used by Duke Energy Progress is consistent with the CAM for the minimum size method, what is typically called the Minimum System Method. For each FERC account included in the minimum system study, the CAM manual instructs the utility to "determine the average installed book cost of the minimum [equipment] currently being installed."[15]

Witness Barnes' second criticism is that the hypothetical minimum system would never be built today because of other available alternatives such as a combination solar panel and battery.[16] Regardless of whether he is correct, the task at hand is to allocate the existing costs the Company HAS incurred to provide a minimum system to serve customers. The costs of a solar panel and battery are not relevant.

[14] Barnes Direct Testimony, p. 27.
[15] NARUC CAM, pp. 91-92.
[16] Barnes Direct, Testimony, pp. 29-31.

Q. WITNESS BARNES ALSO SAYS THE COMPANY IS "DOUBLE COUNTING" DEMAND THROUGH USE OF THE MINIMUM SYSTEM METHOD.

A. I do not understand what Witness Barnes is referring to on page 32 of his testimony. However, I can assure the Commission that the Company is fully allocating all costs and is not double counting any costs.

Q. WITNESS WALLACH OFFERS A SPECIFIC CRITICISM OF THE MINIMUM SYSTEM METHOD THAT DUKE ENERGY PROGRESS USED RELATED TO NUMBER OF UNITS. PLEASE ADDRESS HIS ALLEGATION.

A. On page 10 of his direct testimony, Witness Wallach states that one of the "fundamental flaws" in the minimum system method is that it "erroneously assumes that the minimum system would consist of the same number of units (e.g., number of poles, feet of conductors) as the actual system." In fact, the Duke Energy Progress' minimum system study does NOT assume the same number of poles and feet of conductor. Instead, the cost for a "skeleton" mile of system with the minimum number of poles and feet of conductor is developed and multiplied by the miles of line. This assumption results in a lower minimum system cost than assuming the same number of poles and lines.

V. OTHER COST OF SERVICE ISSUES

Q. IS THE COMPANY'S TREATMENT OF THE COSTS OF AMI METERS AND UNCOLLECTIBLE COSTS IN THE CUSTOMER CLASSIFICATION AND THE RELATED ESTABLISHMENT OF RATES APPROPRIATE?

A. Yes. Duke Energy Progress witness Schneider speaks at length about the benefits of the AMI infrastructure. These meters are now the standard installation configuration for most all customers and, as such, are appropriately classified as customer-related costs. With regard to uncollectible costs, Witness Wallach makes an unsupported claim that these costs "tend to vary with revenues and thus with usage."[17] Duke Energy Progress has historically treated these as a customer cost in the same category as other FERC Customer Accounting Accounts. This is a reasonable assumption. Their appropriate inclusion as customer-related costs then results in the appropriate inclusion of the costs in setting the BFC.

Q. WHAT POSITION HAVE INTERVENORS OTHER THAN THOSE DISCUSSED ABOVE TAKEN ON THE COMPANY'S COST OF SERVICE METHODOLOGY?

A. The Office of Regulatory Staff (ORS) has accepted the methodology as reasonable. On page 6 of his direct testimony, ORS Staff Witness Michael Seaman-Huynh states, "ORS concluded that, for the purposes of this Application, the methodology applied in constructing the Company's [Cost of

[17] Wallach Direct Testimony, p. 19.

Service Study] is reasonable. The methodology provides a reasonable assessment and allocation of the Company's revenues, operating expenses and rate base items." No other intervenors in this case, other than the three discussed above, have raised issues with the Cost of Service Methodology, including the inclusion of the minimum system methodology.

Q. DO YOU HAVE ANY ADDITIONAL COMMENTS IN CLOSING?

A. The cost of service study used in this case provides a proper foundation for distributing costs among the jurisdictions and customer classes because it recognizes cost causation and distributes costs accordingly. This study also provides a proper basis for determining cost-based rates and is a major component of fair and equitable rate design.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.